Fact Sheets

SRS

Nonradioactive Waste Disposal Facility

Background

The Nonradioactive Waste Disposal Facility (NRDF), also known as the Sanitary Landfill, occupies approximately 70 acres in the central part of the Savannah River Site (SRS). The original solid waste disposal facility was constructed in 1974 and occupied 32 acres.

In 1986, the South Carolina Department of Health and Environmental Control (SCDHEC) gave approval for expansion of the facility. In 1987, the original facility reached its capacity, and the 23-acre Southern Expansion began receiving waste. When the Southern Expansion reached capacity in mid-1992, a 16-acre Northern Expansion was opened and began receiving waste.

During the course of its operation, the NRDF received waste consisting of paper, cardboard, solvent rags, plastics, cafeteria waste, rubber, wood, old office furniture, and small amounts of construction debris. Asbestos and sludge skimmed from the site's wastewater treatment plant are also buried at the disposal facility.

Environmental Concerns

Over the years, solvent rags used in maintenance activities and Health Protection sampling were buried at the original facility and in the Southern Expansion in accordance with waste disposal practices accepted at that time. In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA), which provided rules for the management of more than 450 chemical wastes. RCRA legislation required specific permits for treatment, storage, and disposal of these hazardous wastes. In 1991, SCDHEC determined that disposal of the solvent rags and wipes were regulated by RCRA. The primary contamination issue from the disposal of the solvent rags was determined to be trichloroethylene (TCE) in the groundwater.

Environmental Actions and Plans

In August 1991, SRS agreed with SCDHEC to close the portions of the disposal facility that contained RCRA wastes. In October 1992, a small number of solvent rags were discovered in portions of the disposal facility not covered by the agreement. As a result, SRS agreed to a RCRA closure of the original disposal facility site and its Southern Expansion. In 1995, a foundation (stabilization) layer of clean test-compacted backfill was placed over the site. This activity was performed to stabilize the landfill and reduce rainwater infiltration into the waste trenches prior to final closure.

A Closure Plan was submitted to SCDHEC specifying installation of a geosynthetic closure cap to close the 55 acres of the landfill that received solvent rags and wipes. Following the public comment period, SCDHEC approved the Closure Plan. Installation of the closure cap began in February 1996; construction activities were completed in May 1997; and closure was certified in October 1997.

The geosynthetic cap was the first approved in the state of South Carolina for a hazardous waste unit. This technology had several advantages over a traditional kaolin clay cap, including ease of installation and maintenance of the cap, greater protection of the groundwater, and a cost savings of six million dollars. SRS will monitor and maintain the cover for a minimum of 30 years.

With SCDHEC concurrence, efforts to clean up the groundwater were initiated in 1997 with the installation of two horizontal wells. These wells are part of an in-situ bioremediation system to cleanup the groundwater. In-situ bioremediation utilizes indigenous microorganisms to destroy the contaminants in place. The two horizontal wells, measuring 800 and 900 feet, have the longest screen zones utilized for environmental remediation in the country. Installation of the aboveground portion of the bioremediation facility was initiated in August 1998. Startup testing and facility operation began in 1999. The bioremediation system injects air and nutrients (initially methane, nitrous oxide and triethyl phosphate) into the groundwater stimulating the microorganisms, which then degrade the hazardous constituents to non-hazardous constituents. Methane injection was discontinued in January 2001, because TCE concentrations had decreased substantially and numerical modeling indicated that further methane injection would no longer be beneficial.

In March 2000, the RCRA Part B Permit Renewal Application Rev. 0 for the NRDF was submitted to SCDHEC. A preliminary Notice of Deficiency was received in February 2001. SCDHEC indicated that comments of a more technical nature would be issued at a later date. The Rev. 1 Permit Renewal Application was then submitted in March 2001.